

UNITED STATES GOVERNMENT

Memorandum

for [unclear]

TO : Refuge Manager, Medicine Lake NWR and
Northeastern Montana Wetlands, Medicine Lake, Mt.

DATE: February 15, 1973

FROM : Chief, Land Management, BSWF, Billings

SUBJECT: 1973 Annual Water Program

Your 1973 annual water program is approved.

Robert M Ballou
Robert M. Ballou



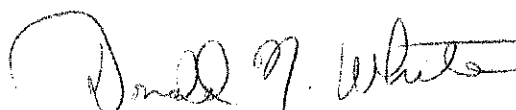
Area Manager, Bureau of Sports Fisheries &
Wildlife, Billings, Mt.
(AM)

February 6, 1973

Refuge Manager, Medicine Lake Refuge
Medicine Lake, Mt.

1973 Annual Water Program - Medicine Lake NWR

Attached for your review is the 1973 Annual Water Program for Medicine
Lake Refuge, Lamesteer Refuge and the Northeastern Montana Wetlands.

A handwritten signature in cursive script, reading "Donald N. White". The signature is written in dark ink and is positioned above the printed name.

Donald N. White

MEDICINE LAKE NATIONAL WILDLIFE REFUGE
MEDICINE LAKE, MONTANA

ANNUAL WATER PROGRAM - 1973

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

MEDICINE LAKE NATIONAL WILDLIFE REFUGE
MEDICINE LAKE, MONTANA

ANNUAL WATER PROGRAM - 1973

I. Record of 1972 Water Use

A. Source of Supply

Run-off water from melting snow in March 1972, provided the major water supply for all refuge impoundments.

B. Type of Rights

The Bureau of Sport Fisheries and Wildlife through filings posted and recorded holds appropriative water rights as shown below. Two of the older wells have vested water rights.

Water Rights Filing No.	Source	Amount of Water Rights C.F.S.	Acres under Water Right
233163	Cottonwood Creek	100	3,640
233164	Sand Creek	75	3,640
233165	Lost Creek	25	840
233166	Sheep Creek	20	750
242886	Sheep Creek	300	2,287
233167	Lake Creek	100	3,640
233168	Big Muddy Creek	50	1,600 Homestead
233169	Big Muddy Creek	1,200	2,000 Medicine Lake
Vested	Sandhill Well #1	3 gpm	None
Approp. (No.no.)	Sandhill Well #2	10 gpm	None
Vested	Old hdqtrs. well	300 gpm	None
Approp. (No.no.)	New hdqtrs. well	25 gpm	None

C. Purpose of Use

All appropriated creek waters were used for irrigation of lakes and marshes to produce wildlife food, habitat, control disease, and storage for late season water needs. All wells were used for livestock or domestic water use.

D. Season of Use

The main season of water use is from late March until early December each year. The water impoundments are frozen over from early December through March each year. The headquarters well is used throughout the year. The attached Annual Summary of Water Use form shows the period of use.

E. Quantity Used

A total of 112,269 acre feet of water entered the refuge via creek channels in 1972. An estimated 7.6 acre feet of water was pumped from four refuge wells. Of the previously mentioned 112,269 acre feet, 73,047 acre feet were released as excess to our needs.

73,047 let out

F. Place of Use

The Annual Summary of Water Use form shows the general location and gives reference to the legal description of the place of use for all waters appropriated during 1972.

G. Adequacy of Supply

The water level in all impoundments filled to capacity in March. There was 39,222 acre feet of water excess to our needs.

Due to unusually high rainfall, most impoundments stayed at operational level throughout the season. The following chart shows monthly water levels in 1972.

MONTHLY RECORD OF GUAGE READING - 1972

IMPOUNDMENT	No. 4*	No. 6**	No. 10	No. 11	No. 12	Katy's L.
PRESENT						
OPER. LEVEL	1943.00	1937.65	1945.00	1951.54	1954.00	1954.00
January	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen
February	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen
March	1951.96	1945.22	1947.89	1952.78	1957.40	1954.20
April	1943.98	1937.44	1945.37	1951.38	1956.08	1954.64
May	1943.86	1937.82	1944.73	1950.68	1956.04	1953.72
June	1943.58	1937.80	1944.43	1950.32	1955.50	1954.70
July	1942.80	1937.70	1944.33	1950.90	1954.50	1954.54
August	1942.90	1937.40	1944.13	1951.14	1954.46	1954.40
September		No guage readings taken				
October	1942.44	1936.90	1943.83	1951.22	1954.16	1953.10
November	1942.56	1936.80	1944.03	1951.36	1954.46	1954.20
December	Frozen	Frozen	Frozen	Frozen	Frozen	Frozen

All guage readings as of the middle of the month.

* No. 4 - Medicine Lake

** No. 6 - Homestead Lake

Given below is a chart of the comparison of deficiencies in unit water levels at freeze up time during 1967-1972.

DEFICIENCY IN ACRE FEET AS OF DECEMBER 1

Impoundment	1967	1968	1969	1970	1971	1972
Medicine Lake	*13,000	16,700	4,000	8,700	21,950	4,300
Homestead Lake	* 3,600	8,000	*6,000	*2,300	* 2,820	1,000
Katy's Lake	678	300	** 0	** 0	136	0
No. 10 Lake	1,600	1,800	900	600	158	500
No. 11 Lake	380	500	100	400	1,273	30
No. 12 Lake	500	3,300	** 0	450	105	0
Total	19,758	27,600	11,000	12,450	26,442	5,830

* Water released for disease control or marsh management.

** No deficiency, at operational level.

II. Recommendations for 1973

We will need 5,830 or more acre feet of water to bring all impoundments up to operational level in the spring of 1973. We normally receive 25,000 or more acre feet each spring.

The following recommendations are offered for water management on Medicine Lake Refuge during 1973.

1. Current approved operational levels will be continued for 1973.
2. Impoundments will be filled as early in the spring as possible.
3. Homestead Lake has a tendency toward botulism. Often in the late summer the lake must be drawn down from one to two feet. We recommend to continue these drawdowns if necessary. However, Homestead Lake should be refilled in the fall when the danger of botulism has passed. Homestead Lake can easily be refilled from Medicine Lake.
4. Hold water as high as possible for two months in Medicine Lake in the spring. This accomplishes several objectives in reference to our systems management.
 - A. Reduce gull production by reducing the available area on nesting islands.
 - B. Increase waterfowl production by producing more edge to increase pair use. (The high water will not affect goose production since they nest on the larger islands.)
 - C. Provide spawning habitat for northern pike to provide higher quality fishing experience.
 - D. Provide additional nesting habitat for grebes and other over-the water nesting birds.

5. Water in excess of what is needed to obtain approved operational levels will be diverted downstream to the next impoundment. Excess water in Homestead Lake or Medicine Lake will be released back out into Muddy Creek.
6. The earthen dam placed across Sheep Creek by Alvin Erdahl of Froid, Montana, should be checked in the spring of 1973. In a year of low run-off this dam may deplete our water supply. In years of normal to high run-off its effect is negligible or none existent.
7. Proposed Water Use Priority

	<u>Unit</u>	<u>Purpose</u>	<u>Priority</u>
	Katy's Lake	Nesting and Rearing	1
N	No. 10 Lake	Nesting and Rearing	2
	No. 11 Lake	Nesting and Rearing	1
	No. 12 Lake	Nesting and Rearing	1
	Gaffney Lake	Storage, Nesting and Rearing	2
	Medicine Lake	Storage, Nesting and Rearing	2
	Homestead Lake	Nesting and Rearing	1

LAMESTEER NATIONAL WILDLIFE REFUGE

WIBAUX, MONTANA

ANNUAL WATER PROGRAM - 1973

1. Source of Supply

Spring run-off water entering the reservoir via Lamesteer Creek is the entire source of water for the Lamesteer Reservoir.

2. Type of Rights

A "Notice of Appropriation of Water" claiming 427 acre feet of water of Lamesteer Creek was posted on June 30, 1938, over the signature of Wilbert A. Rodgers, Administrative Assistant, Bureau of Biological Survey, as authorized agent for the Secretary of Agriculture. The fact of posting was recorded in Book 6 of Miscellaneous on page 345 in the Wibaux County Recorder's Office, Wibaux, Montana, on July 16, 1938.

3. Purpose of Use

During the 1972 season all waters were used for wildlife use and flood control as called for in the "Notice of Appropriation of Water".

4. Season of Use

Water usage on the refuge is on a yearlong basis with the heaviest demands being made during the ice free period of March through November when evaporation and transpiration rates are the greatest.

5. Quantity Used

The major water supply was derived from melting snow in March and April, 1972. The water level in Lamesteer Reservoir held up well all year and was only 8 inches below crest at freeze-up in November.

6. Place of Use

All appropriated waters were used within the boundaries of the SE $\frac{1}{4}$ of Section 14 and all of Sec. 15, T21N, R6OE of Montana Principal Meridian, Wibaux County, Montana.

7. Adequacy of Supply

The water supply for Lamesteer reservoir was excellent this year. We have no way of knowing the acre feet of water that passed over the spillway, but estimate it was a substantial amount.

8. Recommendations for 1973.

Actually the Lamesteer spillway is nonadjustable and the water is impounded up to crest elevation and then spills over the structure. During very high

run-off periods water will go around the emergency spillway on the south side. Our main recommendation is to hold all water to crest operational level for wildlife use.

There is evidence of an estimated 15 acres being put into irrigated cropland just south of the Lamesteer dam. This would bear watching in 1973. The owner of the land, Mr. Wallace Scott, can pump out of the overflow only. The Bureau has water rights on water in the impoundment. Any sign of pumping directly from the reservoir will be reported to the Regional Office.

NORTHEASTERN MONTANA WETLANDS

SHERIDAN, ROOSEVELT AND DANIELS COUNTIES, MONTANA

ANNUAL WATER PROGRAM - 1973

1. Source of Supply

The marshes, lakes, and ponds are dependent on spring run-off for water. The spring and summer rains may replenish some Type I's and III's.

2. Type of Rights

The Bureau has not filed water rights on any wetlands. A private landowner already has filed water rights on the marsh on which Sheridan County Tracts 42 and 66 are located.

3. Purpose and Season of Use

All water received is used for wildlife, water conservation and recreation. The ice free period (April - November) will be the season of greatest use.

4. Quantity and Place of Use

We have no way of measuring inflow of water into any of our WPA's.

5. Adequacy of Supply

Since many Type III marshes go dry in late summer, it is obvious that our water supply is generally inadequate for these smaller wetlands. A strong program of prayer and meditation may help alleviate the situation.

6. Recommendations for 1973

Two aerial surveillance flights should be flown to check for burning, draining or filling of easement wetlands. Oil pollution monitoring is also planned during 1973.

If we receive funds through the second expansion package, seven dams will be built to retain water for wildlife use and as a soil and moisture conservation measure.

Submitted by: Donald M. White

Date: Feb. 7, 1973

Approved: _____

Date: _____

ANNUAL SUMMARY OF WATER USE

Medicine Lake

National Wildlife Refuge

For the year 19 72

Signature of Donald N. White
 Submitte y. Donald N. White
 Title: Refuge Manager
 Date: February 6, 1973

Water Rights				Period of Use			Amount Diverted Ac. Ft.	Water Use		List Acres Actually Irrigated in Each Subdivision										Totals	
Source of Supply	Type of Right	Priority Date	Amount	Month	Days	Use*		Unit No.	Twp.	Range	Sec.	NE 1/4		NW 1/4		SW 1/4		SE 1/4			
Sheep Creek	Approp. Filling No. 233165	11/7/36	20	March	17 d 16 hr	14,511	Homestead Lake				To Homestead Lake (For legal description of area of water use refer to page 6 of May, 1965 report of Diverted Water Use.)										
Cottonwood Creek	Approp. Filling No. 233163	11/7/36	100	March	29/28	21,690	#11				Water Unit #11 with surplus to #10 and Medicine Lake. (For legal description of area of water use refer to page 5, 4, 3 of May 1965 report of Diverted water use.)										
Lost Creek	Filling No. 233165	11/7/36	25	March	15 d 6 hr	762	Homestead Lake				To Homestead Lake (For legal description of area of water use refer to page 6 of May 1965 report of Diverted Water Use.)										
Sand Creek	Filling No. 233164	11/7/36	75	March	17 d 17 hr	4,392	#10				Water Unit No. 10 with surplus to storage in Medicine Lake. (For legal description of area of water use refer to page 6 of May 1965 report of Diverted Water Use.)										
Lake Creek	Filling No. 233167	11/7/36	100	March	15 d 10 hr	14,116	#12				Water Units No. 12 with surplus to Units 10, 11 and Medicine Lake. (For legal description of area of water use refer to page 6 of May 1965 report of Diverted Water Use.)										
Big Muddy to Homestead	Filling No. 233168	11/7/36	50	March	2 d 3 hr	8,400	Homestead Lake				For legal description of area of water use refer to page 6 of May, 1965 report of Diverted Water Use.)										
Big Muddy to Main Lake	Filling No. 233169	11/7/36	1,200	March	17 d 11 hr	48,398					Big Muddy Creek to Medicine Lake. Storage to Medicine Lake (For legal description of area of water use refer to page 5 of May 1965 report of Diverted Water Use.)										
Homestead to Muddy Creek			670	March	15 d 6 hr	20,547					Released from Homestead Lake into Muddy Creek amount of the refuge. (Water surplus to our needs?)										
Medicine Lake to Muddy Creek			1,800	March	14 d 14 hr	52,500					Released from Medicine Lake into Muddy Creek and out of the refuge. (Water surplus to our needs?)										

* Indicate the crop, pasture, pond, or marsh irrigated.

Sheet _____ of _____

ANNUAL SUMMARY OF WATER USE
Medicine Lake National Wildlife Refuge

Submitter: Donald N. White
 Title: Refuge Manager
 Date: February 6, 1973

For the year 19 72

Water Rights			Period of Use		Amount Diverted Ac. Ft.	Water Use		List Acres Actually Irrigated in Each Subdivision										Place of Use		Totals
			Type of Right	Priority Date	Amount	Month	Days													
Source of Supply	Twsp.	Range	Sec.	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	Totals
Sandhill Well #1					3 gpm	June thru November	6 mo.	1.2												
Sandhill Well #3					10 gpm	June thru November	6 mo.	1												
Old hdqtrs. well, vested					800 gpm	June thru September	4 mo.	0.4												
New hdqtrs. well, vested					25 gpm	All year	1 yr.	3												

* Indicate the crop, pasture, pond, or marsh irrigated.

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